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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,530	12/05/2003	Young-hoon Sung	030681-600	7324
21839 7590 11/28/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER RAHMJOO, MANUCHER	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 11/28/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/727,530

Applicant(s)

SUNG ET AL.

Examiner

Mike Rahmjoo

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 and 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 15, 21-23, 29 and 35 is/are rejected.
- 7) ☒ Claim(s) 4-8, 10-14, 24-28, 30-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,21,9,29,15,35 are rejected under 35 U.S.C. 102(e) as being anticipated by Center, JR. (US PAP 2003/ 0059124), hereinafter, Center.

As per claims 1 and 21, and as to the broadest reasonable interpretation by examiner, Center teaches (a) initializing parameters used for a user detection (e.g., the multitude of stages using image acquisition device 10) corresponding to for example [0036];

(b) determining a current mode (motion or static image detection) corresponding to for example [0041] and [0059];

(c) when it is determined that the current mode is the face detection mode, performing a face detection on each of a plurality of image frames, and when a face is not detected even after a predetermined number of face detection trials, selecting a

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motion detection mode and going back to step (b) corresponding to for example the abstract and [0041] wherein motion detection determination is made via subtle changes in pixel values, such as luminance values and [0058] wherein motion detection in ROI (region of interest) corresponding to the head;

and (d) when it is determined that the current mode is the motion detection mode, performing a motion detection on a predetermined number of image frames at a time, and when at least a predetermined number of motion detections are performed successfully within a predetermined period of time, going back to step (a) corresponding to for example [0041] wherein motion detection in light many frame attributes are made; said motion detection is performed to the ROI real time in [0058].

As per claims 9 and 29 Center broadly teaches performing the motion detection using a temporal edge detection algorithm corresponding to for example [0051] wherein erosion operation is used for edges for the ROI.

As per claims 15 and 35 Center broadly teaches interrupting the motion detection with a predetermined period and then performing a face detection corresponding to for example [0041] wherein a differencing function is used for pixel variations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2- 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Center in view of Matsugu (UA PAP 2002/ 0181775).

As per claim 2 Center does not teach detecting a face candidate region using a Gabor wavelet transformation.

Matsugu teaches detecting a face candidate region using a Gabor wavelet transformation corresponding to for example [0047- 48].

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Matsugu into Center to provide pattern recognition processing capable of efficiently performing recognition using a small-scale circuit for detecting (recognizing) a pattern of a predetermined category and size and therefore provide pattern recognition processing capable of detecting an object in a highly reliable fashion corresponding to for example [0013- 15].

As per claim 3 Matsugu broadly teaches detecting a face using a low-resolution support vector machine (SVM) and a high resolution SVM (e.g., another multiple resolution processing method) corresponding to for example [0047].

Allowable Subject Matter

Claims 4,10,24, 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-8, 11-14,25-28 and 31-33 depend on claims 4,10,24 and 30 with allowed subject matter and would therefore be allowed.

Response to Arguments

Applicant's arguments filed 10/30/07 have been fully considered but they are not persuasive.

As per applicant's remarks on page 14- 15, applicant argues "However, these are not carried out in the same order, same way or for the same purposes as the present invention as recited in the independent claims. Specifically, as far as the undersigned can understand Center's system, every frame is grabbed and undergoes a face detection mode. Within the face detection mode, a motion detection stage is employed to help identify a region of interest (ROI)" and "As such, it lacks three features found in claim 1. First, it does not teach or suggest inter alia a face detection mode wherein "when a face is not detected even after a predetermined number of face detection trials, selecting a motion detection mode and going back to step b" for determining a current mode. The Center system also does not have a "motion detection mode" within the context of the present claims, and in contrast to a face detection mode that performs"

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motion detection on a predetermined number of images at a time and when at least a predetermined number of motion detections are performed successively within the predetermined time, going back to step a" for initializing the parameters used in the user detection. Instead, Center utilizes motion detection to resolve a region of interest, but as far as the undersigned can tell each image undergoes a face detection mode that includes motion detection to determine a region of interest".

Examiner respectfully disagrees.

Examiner fails to see how applicant's invention would differ from Center due to the fact that the current application also deals with video images which inherently comprise of frames of images. Any application process essentially would require implementing video frames to proceed with said application. Center utilizes same method as applied by applicant. Examiner points out to the same paragraphs as noted by applicant and in particular to [0041] which states "one or more of these additional input signals in combination with the frame input signal 44 trigger the motion detection stage to assess whether motion has occurred within the field of view. In particular, the motion detection stage 54 is adapted to detect subtle changes in pixel values, such as luminance values, which represent motion, especially when an object moves against a relatively still background image (broadly corresponding to interruptions for example) (such as a kiosk, cubicle or hallway). One method of determining motion is to perform a differencing function on selected pixels in successive frames (corresponding to predetermined number of motion detections successively), and then comparing changes in pixel values against a threshold value.

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If the pixel variations (broadly corresponding to determination of face or motion detection) within the field of view exceed the threshold value, then an object is deemed to have moved within the image. Conversely, if the changes are below the threshold, the system determines that no suitable motion has occurred". As pointed out through the underlined portions the same flow chart pattern which applicant utilizes is applied via cited paragraph. As noted through applicant's disclosure in paragraph [0029] the order of implementing applicant's method is not important. Therefore it is irrelevant to point out the differences which may exist as far as the order is concerned. In response to applicant's argument that Center is nonanalogous art due to different purposes through independent claims, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, examiner also fails to see any purpose(s) as listed in the current independent claims and Center is clearly in the same field of endeavor. The ROI in Center broadly reads on the frames as claimed by applicant. In response to applicant's remarks against claims 15 and 35, examiner points out to [0041] wherein a differencing function is used for pixel variations due to presence of successive video frames and determination made to due to differencing function. The application of Gabor waveform transformation of claims 2 and 3 is made through the secondary prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiry

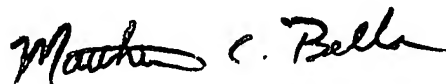
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

November 13, 2007



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600